Continuous-time Finance and Derivative Assets

Module Code: ECO00007M  Credits: 10  Term: 1
Contact Hours: 9 two-hour Lectures (18 contact hours)
Module Organiser: Dr. P. Zerilli

Overview:

This module provides a theoretical foundation for derivatives valuation in continuous time, suitable for those progressing to financial industry or to research in finance. The core content is mathematical in nature, but the financial applications help to motivate the analysis and provide practical examples.

Aims:

This module provides a comprehensive foundation in continuous time pricing theory as applied to:

- Options
- Futures
- Fixed income securities.

The theoretical framework will allow students to understand and apply the key concepts of risk neutral valuation, no-arbitrage valuation, replicating portfolio and martingales. This module also covers advanced topics including models with stochastic volatility and discontinuous processes that more closely resemble situations of crisis in the financial markets.

Assessment:

There will be a two-hour unseen examination scheduled at the start of the Spring Term.

Pre-requisites:

None.

Main References:

The book that covers the material of the course most closely is: